

The study of Ti/Zr based ABx hydrogen storage electrode alloys

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Abstract

Hydrogen storage alloys have been successfully applied to commercial nickel hydride batteries in the last ten years in the 3C electronics areas. However, lithium batteries have been also in a fast speed to replace the nickel hydride batteries in cellular phone market. To find a new market to survive is an urgent step for any hydride battery producer. Currently, we found that the direction is high capacity and/or high power application to replace Ni-Cd and/or Pb-acid batteries.

In the nickel hydride batteries, there are two main hydrogen storage alloy systems: ABx rare earth based and Ti/Zr based alloys used in the negative electrode. During the last ten years, we have studied the Ti/Zr based alloys as well as rare earth based alloys. In this paper, we will present our results of the alloy chemistry and the performance of the recent investigation in the F-size cells.